

the first to last...

structoglas[®] A

glass-fiber reinforced acrylic-modified polyester

A. I. A. FILE NO. 26-A-9



Press Molded

**building panels
flat panes**



structoglas[®] inc.

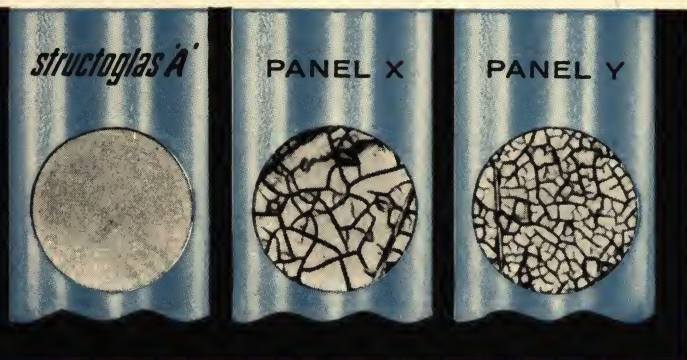
subsidiary of

international molded plastics, inc.
cleveland 9, ohio

structoglas® "A"

has superior weather resistance proven by two-year Florida exposure tests

the first to last . . .



Photomicrographs of glass fiber panels after 24 months' exposure

Virtually no change after two years' exposure . . . that's the outstanding record of acrylic-modified **STRUCTOGLAS "A"** plastic panels. The revealing story illustrated by the magnified (60 times) photographs compares the effects of weather upon durable **STRUCTOGLAS "A"** and look-alike competitive products. Deterioration of conventional light-stabilized resins in panels "X" and "Y" resulted in minute cracks and crazes hastening erosion and bared fibers.

While the **STRUCTOGLAS "A"** panels proved to have 87% gloss retention after 2 years' exposure, panels X and Y retained only 1.5% and 4.3% respectively. In addition, **STRUCTOGLAS "A"** proved to have 2½ to 3 times better resistance to discoloration than panels X and Y.

By every standard of value . . . **STRUCTOGLAS "A"** is the finest translucent plastic paneling available. It has no equal in beauty, precision, durability, economy . . . and offers unprecedented physical, functional and decorative advantages.

Premium quality at standard prices is another **STRUCTOGLAS "A"** benefit. Competitively priced, this top quality material gives more actual value per dollar and is the best long-range investment.

The spectacular new **STRUCTOGLAS "A"** acrylic-modified resin permits the dramatically superior *weather resistance*, *color stability* and *product strength*. The excellent *heat blocking* characteristic of **STRUCTOGLAS** has been accomplished with filtering additives. And, the original jewel-toned "pebble-grain" surface treatment, providing protective resinous beads over the panels' surfaces, offers an extra measure of resistance to erosion.

MECHANICAL PROPERTIES

tensile strength

Ultimate (psi) per ASTM D638-52T	11,406
Elastic Modulus	1.1×10^6

flexural strength

Ultimate (psi) per ASTM D790-49T	28,105
Elastic Modulus	1.4×10^6

compressive strength

Ultimate (psi) per ASTM D695-49T	27,750
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hardness

Barcol scale	55-65
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CHEMICAL RESISTANCE

chemical immersion—weight change



reagent	% weight increase 10 days immersion
Sulfuric acid (30%)	0.2
Sodium hydroxide (10%)	0.2
Ethyl alcohol (95%)	0.2
Carbon tetrachloride	0.0
Sodium chloride (10%)	0.3
Water	0.4
Acetic acid (5%)	0.4
Sodium carbonate (2.0%)	0.3

note: Disintegrated—Acetone, Ethyl acetate and Ethylene dichloride.

PHYSICAL PROPERTIES

specific gravity

1.409 at 23° C. Test in accordance with ASTM D570-50.

water absorption

0.20% in 24 hours at 23° C. In addition, there is no warping, cracking or visible change. Test in accordance with ASTM D570-54T.



thermal properties

material	coefficient of linear expansion in./in./°F.	specific heat cal./gram/°C.	K-factor*	U-factor†
aluminum	12 to 13 x 10 ⁻⁶	0.21 to 0.22	1200 to 1500	1.5
steel	6 to 7 x 10 ⁻⁶	0.10 to 0.12	275 to 325	1.5
glass	4 to 5 x 10 ⁻⁶	0.19 to 0.20	5 to 6	1.13
structoglas "A"	18.2 x 10 ⁻⁶	0.31 to 0.33	1.0 to 1.5	1.09

*Thermal conductivity @ 150°F. BTU/ft.²/hr./°F/in. of thickness.
†U-factor heat transmission coefficient BTU/ft.²/hr./°F.

COLORS AND FINISHES

percentages of visible light and energy transmission

STRUCTOGLAS "A" color	% light transmission	% infra-red transmission	color number
Seashell White	30.0	8.2	210
Crystal Clear	90.0	51.0	211
Softlite Green	69.0	43.0	230
Valley Green	35.0	39.0	231
Turquoise	12.0	19.0	232
Patio Green	26.0	29.0	233
Skyline Blue	69.0	41.0	240
Matador Red	3.0	12.0	250
Fiesta Yellow	37.0	8.0	260
Redwood	7.0	8.0	270

All colors 2% ultra-violet transmission

finish	code
smooth two sides	S25
pebble grain two sides	P25
pebble grain one side	P15

Suggested specifications for structural grade **STRUCTOGLAS "A"**

Wherever glass-fiber reinforced building panels are called for on drawings, or schedules of parts, and/or specifications: "**STRUCTOGLAS "A"**" as manufactured by International Molded Plastics, Inc., Cleveland 9, Ohio, and employing in excess of 19% acrylic modified Paraplex or equal resin shall be used. Panels shall be structural grade reinforced with two ounces of glass fibers per square foot, weigh an average of eight ounces per square foot. The tensile properties shall be 11,406 PSI average when tested in accordance with ASTM test method D638-52T and shall have flexural properties of 28,105 PSI average when tested in accordance with ASTM method D790-49T. Transverse load strength for panels of nominal 2½ inch corrugation shall average approximately 400 pounds per foot of width. Panels shall comply with all other requirements of the Commercial Standard CS 214-57 for General Purpose Type I Materials. Color shall be (number and name) having visible light transmission of _____% as measured by the SPI Transmissometer method. Panel thickness shall be .062", plus or minus .010".

STRUCTOGLAS "SE" fire-retardant panel



A fiberglass reinforced paneling that is self-extinguishing . . . "SE" features a Flame Spread Rating of 60-70, and a Fuel Contribution of 10. **STRUCTOGLAS "SE"** has been developed to meet institutional, commercial and industrial building codes that specify a Flame Spread Rating of below 75 for building materials in applications where fire safety is of the utmost importance.

Made from special resins and by the exclusive **STRUCTOGLAS** press-molding process, "SE" panels feature the same excellent dimensional accuracy and weather-resistant "Pebble Grain" surface as all other **STRUCTOGLAS** products. "SE" flat panes and corrugated panels are available in a special green color. Each panel carries Underwriters' Laboratories and Factory Mutual labels and complies with Commercial Standard CS 214-57 for Fire-Retardant, Type II Materials. **STRUCTOGLAS "SE"** is listed in the Approved Equipment Manual of the Factory Mutual Engineering Division.

1¼ PITCH

2½ PITCH (2.66)

2.67 PITCH

4.2 PITCH

TECHNICAL DATA

panel	thick-ness	standard lengths*	standard width	coverage width	finish† at edge	lappage (no. corr.)	span for 100 lb. load	corrugation			finish code	color number	weight oz./sq. ft.	glass fiber content
								actual pitch	depth	number				
2½"	1/16"		26" 27½" 33" 34" 40" 50" 51½"	24" 24" 29¾" 32" 37½" 48" 48"	B A A B B B A	1 1½ 1½ 1 1 1 1½	48"	2.66"	½"	10 10½ 12½ 13 15 19 19½	P2S S2S	all colors 211, 230, 240††	8	2 oz.
1¼"		8' 10' 12'	26" 36"	24" 33½"	A B	2 1½	32"	1.25"	¼"	20½ 29	same as 2½"			
4.2	1/16"		42"	37.8"	B	1	54"	4.2"	1½"	10	P1S	211, 230, 240††	8	2 oz.
	3/32"												12	3 oz.
2.67	1/16"		35"	32"	A	1½	54"	2.67"	¾"	13½	P2S	211, 230, 240	8	2 oz.
2"			39¾" 47¾" 53¾"	37¾" 45¾" 51¾"		1	48"	2"	7/16"	20 24 27	P2S	710, 731, 733 741, 750, 751 752, 760, 770, 771	8	2 oz.
step down	1/16"													
flat	1/16"	8' 10' 12' and all window lite sizes	16" 24" 32" 42" 48"				to 320 sq. in.						8	2 oz.
flat	.080						to 720 sq. in.				P2S	210, 211, 230 231, 232, 233 240, 250, 260 and 270	9	2½ oz.
flat	3/32"		16" 24" 32" 40" 48"				to 1000 sq. in.				S2S		11	3 oz.

*Standard lengths cut into equal parts. Non-standard sizes can also be furnished in 6" increments. All panels, with exception of 2.67, available in maximum lengths of 13' 6" at no extra charge.

†Finish at edge: A = Edge up, one edge down; B = Both edges down.
††One minimum release of 1,200 sq. ft. of any one color for delivery at one time; any color may be obtained.



CORRUGATED PANELS installation instructions

Progressive management everywhere is specifying *STRUCTOGLAS* "A" reinforced plastic panels for both new construction and reglazing existing structures. The superior strength of *STRUCTOGLAS* "A" panels . . . up to 100% stronger than minimum industry requirements . . . makes them widely acceptable as a structural building material.

Basic installation information for corrugated panels in fixed mounted roofing units are as follows:

1. Provide purlin members at recommended maximum intervals required for corrugation selected:

Corrugation: 1 1/4"	Purlin Interval: 32"
2 1/2"	48"
2.67 & 4.2"	54"

2. Remove protective cellophane sheet from *STRUCTOGLAS* "A".

3. For best protection against prevailing winds and weather, apply panels beginning at leeward end of run and working to windward.

4. Provide one corrugation overlap at sides when employing Universal Vinyl Lap-Seal. Provide 1 1/2 corrugations overlap when using *STRUCTOSEAL*, a clear mastic.

5. Provide 8" end-lap for roof with pitch of less than 4" in 12"; 6" end-lap for roof slope of more than 4" in 12".

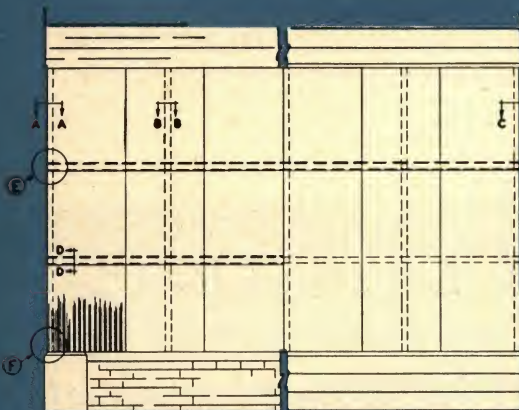
6. Fasten panels through crowns at every second corrugation. Fasteners with armored neoprene washers are recommended.

7. Apply side-lap fasteners every 9" to 12".

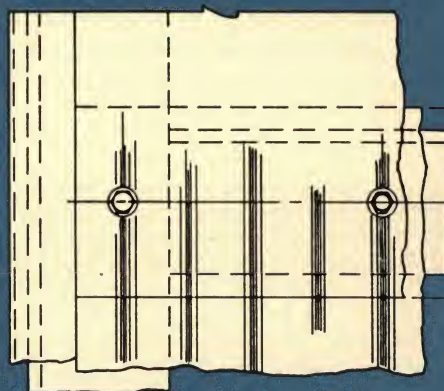
8. For sidewall installations, lap panels one corrugation when using either Universal Vinyl Lap-Seal or clear mastic. Recommended minimum end-lap is 4". Recommended maximum girt spacing:

Corrugation: 1 1/4"	Girt Interval: 44"
2 1/2"	60"
2.67 & 4.2"	66"

SIDEWALL MOUNTING



SIDE WALL ELEVATION



VIEW "E" ENLARGED

2 1/2 CORR. SHOWN TYPICAL

DUAL SEAL
SA 132 WITH
FASTENER
SA 226

4" LAP

CORR.	MAX. DIST.
1 1/4	44"
2 1/2	60"
2.67	66"
4.2	66"

VERTICAL LONGITUDINAL RUBBER SEALS—SA 106 TO 109

2 TO 3
CORRUGATIONS

FASTENERS
SA 220 SERIES

SECTION A-A

SECTION B-B

UNIVERSAL LAP SEAL SA 310 SERIES

UNIVERSAL LAP SEAL OPTIONAL

SECTION D-D

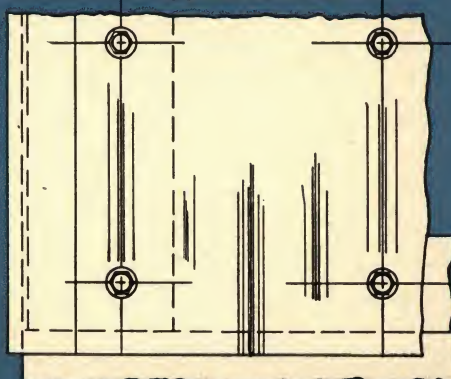
VERTICAL LONGITUDINAL
RUBBER SEALS—
SA 136 TO 139

2 TO 3
CORRUGATIONS

SECTION C-C

FASTENERS
SA 200 SERIES

9" TO 12"



VIEW "F" ENLARGED

ALL SECTIONS SCALE 3"=1'0"

ALL SHEET METAL AND STEEL WORK BY OTHERS

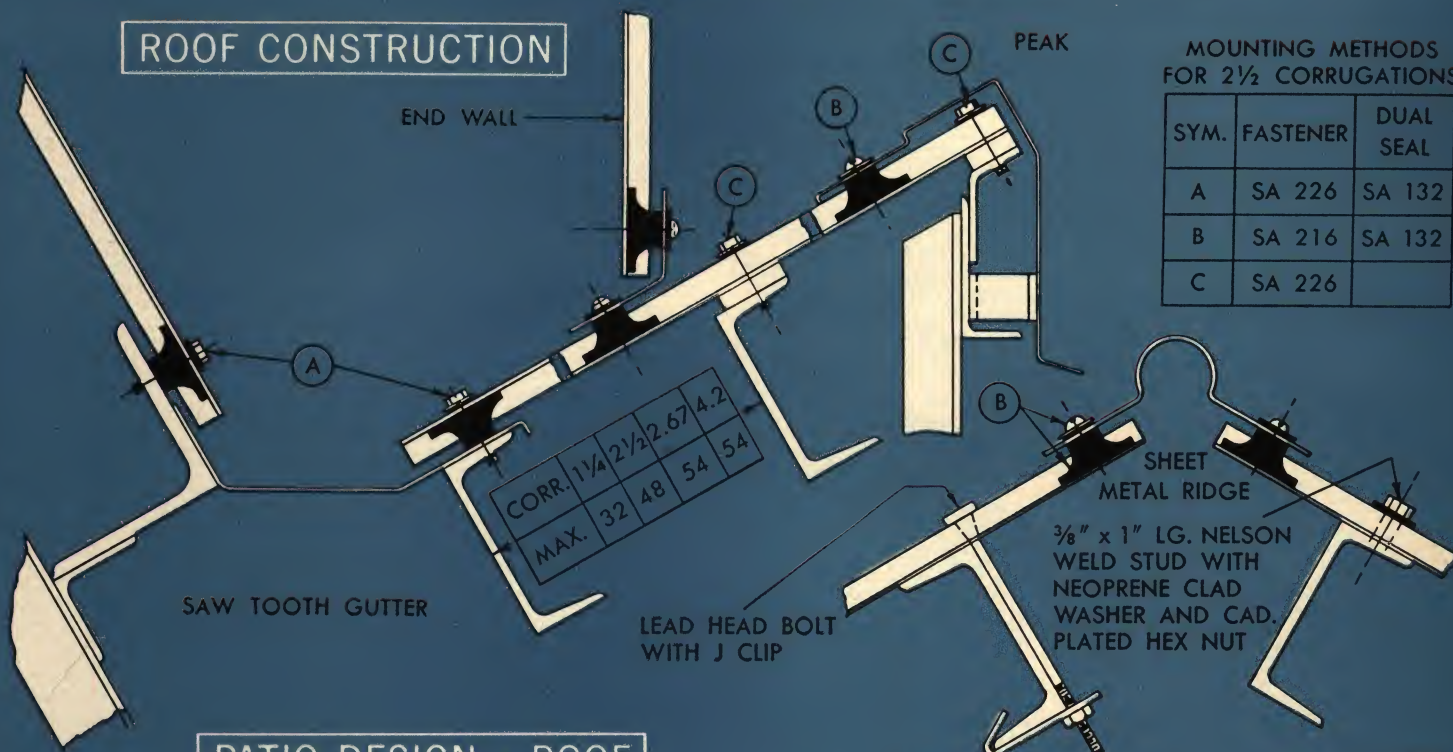
FOR LASTING BEAUTY AND UTILITY

Beautiful, durable STRUCTOGLAS "A" suggests a host of functional and decorative uses. For every indoor and outdoor plastic building panel application, for diffused lighting, shelter, facing or area division, STRUCTOGLAS "A" stands unequalled in quality, performance and economy.

the first to last . . .

structoglas® "A" 7d
In

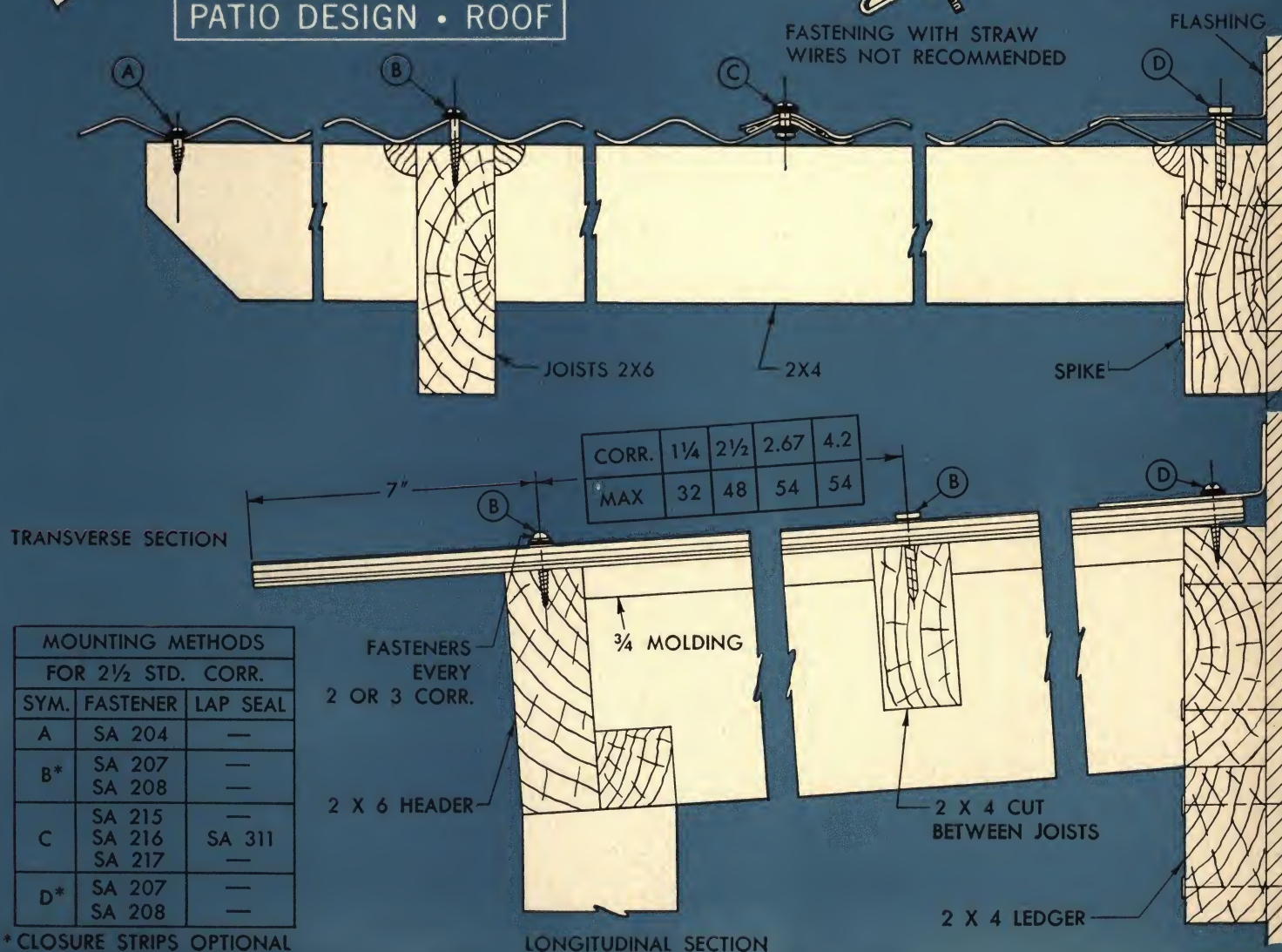
ROOF CONSTRUCTION



MOUNTING METHODS FOR 2 1/2 CORRUGATIONS

SYM.	FASTENER	DUAL SEAL
A	SA 226	SA 132
B	SA 216	SA 132
C	SA 226	

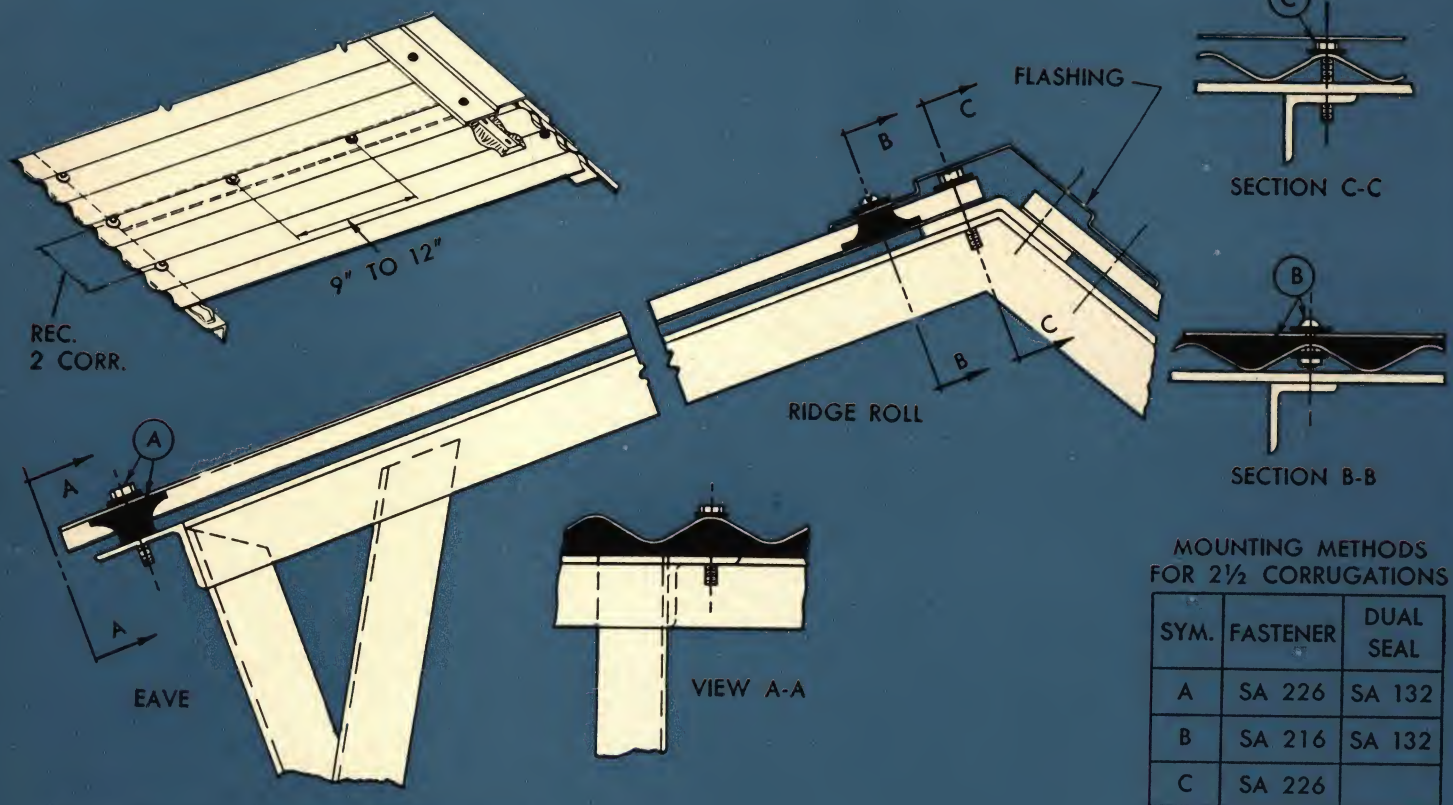
PATIO DESIGN • ROOF



MOUNTING METHODS FOR 2 1/2 STD. CORR.		
SYM.	FASTENER	LAP SEAL
A	SA 204	—
B*	SA 207 SA 208	— —
C	SA 215 SA 216 SA 217	— SA 311 —
D*	SA 207 SA 208	— —

* CLOSURE STRIPS OPTIONAL

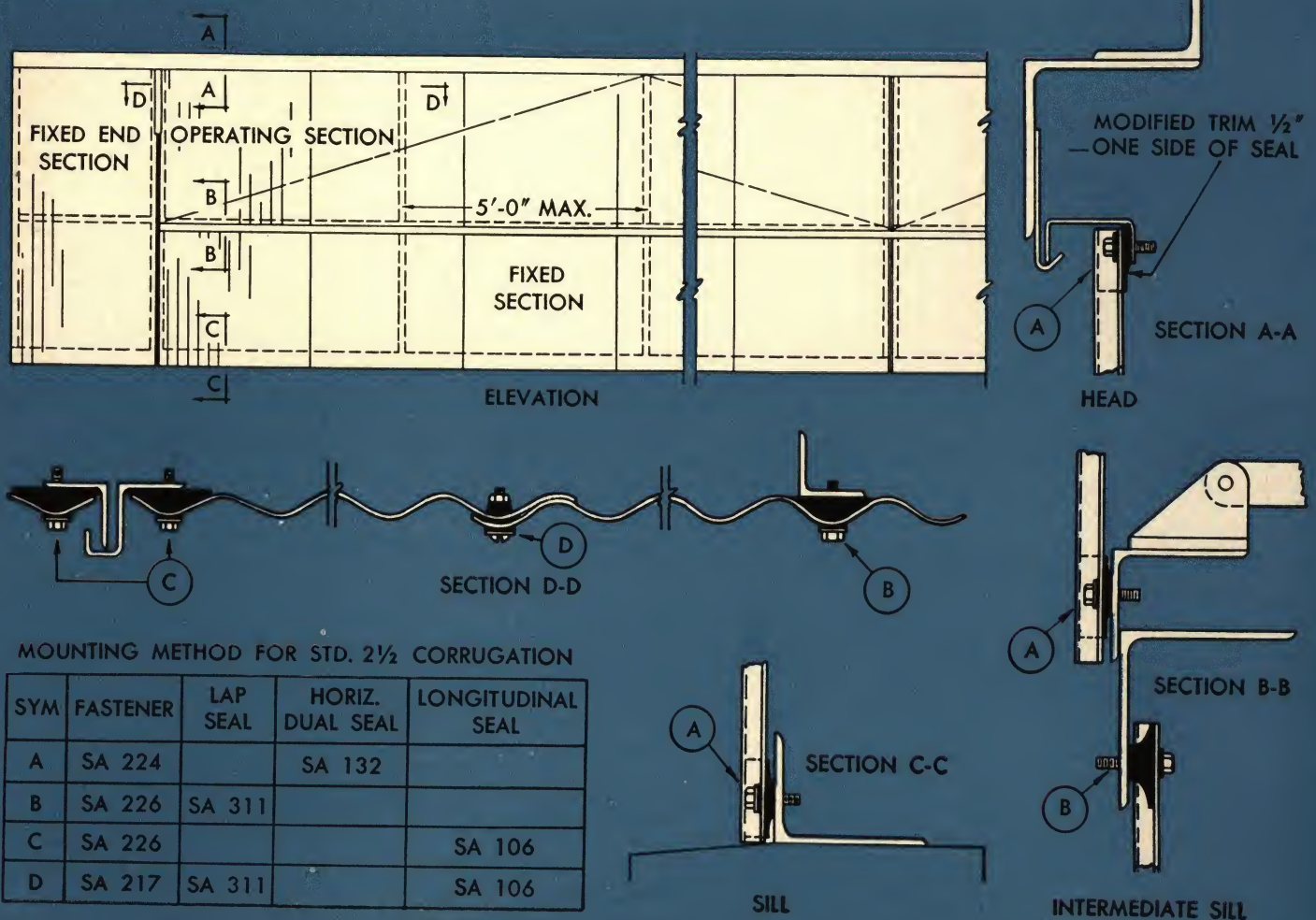
SKYLIGHT CONSTRUCTION



MOUNTING METHODS FOR 2½ CORRUGATIONS

SYM.	FASTENER	DUAL SEAL
A	SA 226	SA 132
B	SA 216	SA 132
C	SA 226	

CONTINUOUS WINDOWS



MOUNTING METHOD FOR STD. 2½ CORRUGATION

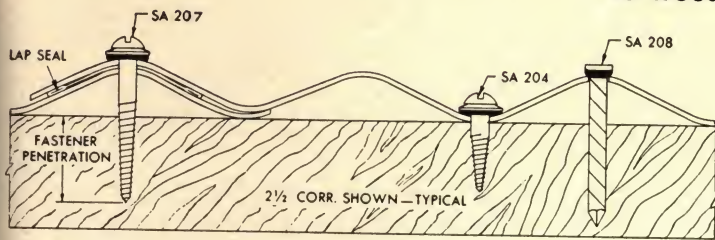
SYM	FASTENER	LAP SEAL	HORIZ. DUAL SEAL	LONGITUDINAL SEAL
A	SA 224		SA 132	
B	SA 226	SA 311		
C	SA 226			SA 106
D	SA 217	SA 311		SA 106

METHODS OF FASTENING STRUCTOGLAS

the first to last . . .

structoglas® "A" 7d
In

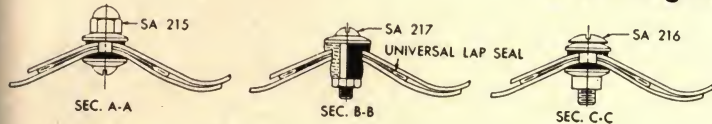
to wood



notes for construction

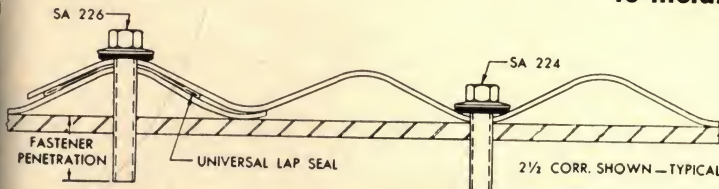
- To avoid deflection of sheets, tighten screw until washer will not revolve, then tighten 1 more turn.
- Avoid excess burr on drilled or punched holes to protect neoprene sealing face.
- Drill for and fasten extreme bolts, with full support below all valleys, then drill for and fasten in-between points.

to structoglas



fastener	clearance drill
SA 215	3/16
SA 216	3/16
SA 217	7/16

to metal



tap drill sizes




metal thickness	steel	aluminum
1/8	#1 (.228)	#4 (.209)
3/16	13/64	#3 (.213)
7/32 to 3/8	13/64	#1 (.228)

FASTENERS

fastening structoglas to	use with CORRUGATIONS								catalog number	description
	crown				valley					
	1¼	2½	2.6	4.2	1¼	2½	2.6	4.2		
wood	✓				✓	✓ sidewalls	✓	✓	SA 204	#10 x 1" A1. Rd. Hd. Wood Screw with ½" armored Neoprene washer.
		✓							SA 207	#10 x 1¾" A1. Rd. Hd. Wood Screw with armored Neoprene washer.
	✓	✓				not recom	mended		SA 208	2" Lg. 9¼ gage A1. Roof Helix Nail with Neoprene washer.
			✓	✓		use SA 204	sidewalls		SA 209	#10 x 2¼" A1. Rd. Hd. Wood Screw with armored Neoprene washer.
			✓	✓		not recom	mended		SA 210	2½" Lg. 9 gage A1. Roof Helix Nail with Neoprene washer.
structoglas	✓	✓	✓	✓	✓	✓ sidewalls	✓	✓	SA 215	#10-32 x ¾" A1. Rd. Hd. Machine Screw with (2) ⅝" armored Neoprene washers and A1. Hex. Capnut.
	✓	✓	✓	✓	✓	✓ sidewalls	✓	✓	SA 216	¼ x ¾" Lg. Stove bolt, steel, Cad. Plated with (2) armored Neoprene washers and (1) Sq. nut.
	✓	✓	✓	✓	✓	✓ sidewalls	✓	✓	SA 217	#10-32 x 7⁄8" Lg. A1. Rd. Hd. machine screw with (1) ⅝" washer, Grommet and Hex. nut.
metal	✓				✓	✓ sidewalls	✓	✓	SA 224	#14 x 1" Lg. Hex Hd. stainless-type steel self-tapping bolt, with (1) ⅝" armored Neoprene washer.
		✓				use SA 224	sidewalls		SA 226	#14 x 1½" Hex. Hd. stainless-type steel self-tapping bolt, with (1) ⅝" armored Neoprene washer.
			✓	✓		use SA 224	sidewalls		SA 228	#14 x 2" Hex. Hd. stainless-type steel self-tapping bolt, with (1) ⅝"


size corrugation	Universal Vinyl Lap			Horizontal Rubber Dual			Vertical Rubber Longitudinal		
	catalog no.	width	length	catalog no.	width	length	catalog no.	width	length
1 1/4	SA 310	1 1/8	Rolls	SA 131		37 3/4"	SA 107	1 1/4	26 1/2"
2 1/2	SA 311	1 7/8	of	SA 132		28"	SA 106	2.66	26 1/2"
2.67	SA 312	2 3/4	50 ft.	SA 133		37 3/4"	SA 108	2.67	26 1/2"
4.2	SA 312	2 3/4	each	SA 134		37 3/4"	SA 109	4.2	26 1/2"

rubber closure strips


	item	width	length	corrugations	quantity per carton
	SA-101	1"	28"	2.66"	88
	SA-102	1"	27"	flat	150
	SA-103	1"	28"	2.67"	100
	SA-104	1½"	25.2"	4.2"	48
	SA-105	1"	24"	1.25"	160
	SA-131	*	37¾"	1.25"	100
	SA-132	*	28"	2.66"	100
	SA-133	*	37¾"	2.67"	48
	SA-134	**	37¾"	4.2"	45
	SA-106	2.66"	26½"	2.66"	44
	SA-107	1.25"	26½"	1.25"	160
	SA-108	2.67"	26½"	2.67"	44
	SA-109	4.2"	26½"	4.2"	16

* 55-60 } hardness (durometer tests)
** 60-70 }

wood moldings

	item	type	width	length	corrugations	radius molded edge	quantity per carton
	SA-120	sap gum	1 x ¾"	72"	2½"	¾"	40
	SA-121	sap gum	¾ x ¾"	72"	1¼"	¾"	40

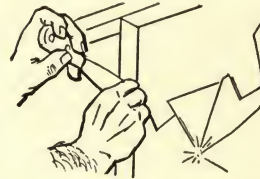
structoseal clear mastic

	item	quantity	description	coverage	quantity per carton
	SA-300	one quart	structoseal	40 lin. ft.	12
	SA-301	one gallon	structoseal	150 lin. ft.	4

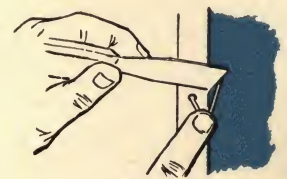
window glazing

STRUCTOGLAS "A" flat panes are available in standard glazing sizes for fast, easy installation in the following gauges: Standard 1/16" for openings up to 320 sq. in., Special .080" for openings up to 720 sq. in. and Heavy Duty 3/32" for openings up to 1000 sq. in. Panes ordered to standard glass dimensions will allow 1/8" clearance on all sides.

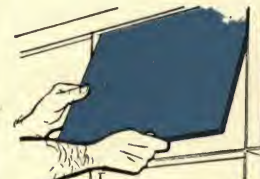
Colors offered are Softlite Green, Skyline Blue and Crystal Clear Translucent. For further information refer to Sweet's Plant Engineering File, Section 5b/In, or write direct for Bulletin SL-1.



1 Remove old putty, broken glass and old glazing points or clips. Clean sash, paint if needed.



3 Insert a glazing clip on all four sides of frame. For larger panes a good "rule of thumb" is one clip every 6".



2 Remove protective cellophane from STRUCTOGLAS "A". Back putty, then insert pane in sash.



4 Apply face putty . . . a non-hardening compound is preferable.

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